

**AN UNUSUAL FORM OF THE SALTMARSH GRASS  
*SPOROBOLUS VIRGINICUS* (L.) KUNTH.**

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*Sporobolus virginicus* is the most widely distributed saltmarsh grass in Australia, being found in all mainland States. Outside Australia it is a cosmopolitan species, occurring on saltmarshes in tropical to temperate regions. The species is very variable in form and also in chromosome number. The basic chromosome number is  $x = 10$  and five different ploidy levels have been recorded from Australian populations (Smith-White 1988).

One of the most unusual forms that we have recorded occurs on the northern shore of the Greenough River mouth in W.A. and is pentaploid ( $2n = 50$ ). Instead of producing 1-flowered spikelets, as in normal sexually reproducing forms, this form exhibits inflorescence proliferation with individual florets replaced by series of plantlets (Figure 1). Bracts at the base of plantlets are glume like but become leaf like, sequentially along the pedicel, developing a sheath, ligule and blade. The bushy character of the inflorescence results from continued apical and intercalary growth of pedicels and the development of additional plantlets. That the plantlets are potentially important in the reproduction, spread and survival of this clone has been demonstrated by Smith-White (1984); one hundred plantlets were taken from several inflorescences in the field and planted into damp sand in pots in glasshouses at the University of N.S.W. and all survived a two month trial period, developing roots and leafy tillers. Pentaploid 'populations' of *S. virginicus* are rare; the only others known are from Hutt Lagoon in W.A. in which the inflorescence is reduced with a few undeveloped terminal florets and from Roebourne in W.A. in which inflorescences develop normally but are pollen sterile.

We first observed the Greenough River sward in July 1980, growing in a narrow strip of saltmarsh on the north side of the estuary, in an area where cars pull off the road. In June 1987 the sward was again studied and on this occasion a large number of the proliferating inflorescences were observed extending over about 200 m of shoreline. This is a much larger area than observed previously but we do not know whether this reflects spread of the sward or more favourable conditions for inflorescence production. The 'Viviparous' pentaploid is sympatric with normal diploid plants and the two forms are not readily distinguishable in the field unless inflorescences are present. *Sporobolus* plants elsewhere in the estuary appear to be uniformly diploid.

As far as is known this pentaploid clone is unique in Australia. We would welcome material of *S. virginicus* showing this growth form from any other region. The sward occupies a limited area and could easily be destroyed by development (e.g. road widening). We hope this note serves to draw attention to the existence of the sward and that suitable measures can be taken to ensure its long term survival.



**Figure 1.** 'Viviparous' form of *Sporobolus virginicus* from the Greenough River; specimen No. 17960, herb.-UNSW & PERTH.

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## REFERENCES

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## AN ANSWER TO THE PUZZLE OF THE TRACKS

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In an earlier article in the Western Australian Naturalist (Morgan and Blyth, 1987), we posed a question as to the cause of numerous unusual impressions and tracks on the intertidal flats of the Murray River delta.

We now have an answer. Dr Ernest Hodgkin of the Environmental Protection Authority directed our attention to a photograph on page 57 of his report on the Blackwood River Estuary (Hodgkin, 1978). Illustrated are the puddling tracks of silver gulls, *Larus novaehollandiae*, which mirror exactly the tracks found by us on the Murray River. Dr Hodgkin had his attention drawn to the puddling of gulls by Mr Jim Lane, leader of the Waterbird and Wetlands Research Group with the Department of Conservation and Land Management, a long time bird watcher on the wetlands around Perth. This revelation concurs with the gull hypothesis in our previous note. Subsequently, one of us (J.B.) has observed further gull puddling activity in the Perth environs resulting in tracks as illustrated.

Puddling by silver gulls has been previously observed in the eastern states of Australia. In a short note, Collins and Collins (1976) mentioned a 'double-shuffle' action of gulls puddling for food items in shallow water near Beeac, western Victoria. The above authors also noted the behaviour in wading birds (e.g. egrets) but it is also displayed by non-waders such as the magpie-lark, *Grallina cyanoleuca* (Prendergast, 1983; Hobbs, 1986; H. Aston, pers. comm.). A similar 'foot-pattering' has been recorded for the flame robin, *Petroica phoenicea*, in non-aquatic habitats (Reynolds, 1976).

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